

REMARKS/ARGUMENTS

It is respectfully requested that claims 19-24 be canceled without disclaimer and prejudice. New claims 25-27 have been added. Thus, claims 1-18, 25-27 are now pending.

In the Office Action, the Examiner has objected to the specification and abstract. Proposed amendments to the specification and abstract is hereby submitted herein for the Examiner's approval. It is believed that the amendment to the specification is in a form that is more preferred by the Examiner.

In addition, claims have been amended to be in a form that is believed to be more preferred by the Examiner. Accordingly, it is respectfully requested that the Examiner withdraw the rejection under 35 U.S.C. §112, second paragraph. It should be noted that no substantive claim amendment has been made. Hence, it is respectfully submitted that the amendment does not necessitate a new search.

The Examiner has rejected claims under U.S.C. §102(b) as being anticipated by U.S. patent 5,768,593 (Walters). This rejection is fully traversed below.

The present application relates to techniques for improving the performance of virtual machines. As a representative claim, claim 1 pertains to a computer-implemented method for increasing the performance of a virtual machine. Claim 1 recites: obtaining a program instruction to be executed by the virtual machine, determining whether the program instruction is a branch instruction, determining whether a basic block is present in a code cache when it is determined that the program instruction is a branch instruction, and executing the code included in the basic block when it is determined that the basic block is present and the program instruction is a branch instruction.

It is noted that *Walters* states that a branch instruction (B) flag can be set to true only for qualifying instructions that are branch instructions (*Walters*, Col. 10, line 25-27). It is further noted that a cross-compiler of *Walters* performs additional processing so as to minimize the native code instructions generated for non-native code conditional branch instructions by minimizing the number of native code instructions used to handle non-native condition codes. For instance, the cross-compiler of *Walters* determines

whether a conditional branch instruction is the target of any other branch instruction(s) within a compilation window and whether it is immediately preceded by a comparison instruction. If the conditional branch instruction is the target of another branch instruction within the compilation window (or is an entry point instruction), and is immediately preceded by a comparison instruction, the cross-compiler converts the non-native comparison instruction into native instructions for generating and storing non-native condition codes, and converts the conditional branch instruction into a sequence of instructions for determining the status of the relevant non-native condition codes prior to performing a conditional branch (*Walters*, Col. 5, line 10-30).

However, it is respectfully submitted that *Walters* does not teach or suggest determining **whether** a basic block is present in a code cache when it is determined that the program instruction is a branch instruction. It should be noted that the basic block includes code **that represents the program instruction**. Instead, *Walters* teaches determining if a conditional branch instruction is the target of another branch instruction within a compilation window.

As such, *Walters* cannot possibly teach or suggest executing the code included in the basic block when it is determined that the basic block is present **in the code cache and the program instruction is a branch instruction**.

Accordingly, it is respectfully submitted that claim 1 is patentable over *Walters* for these reasons alone. Furthermore, it is respectfully submitted that claims that are dependent on claim 1 are also patentable at least for these reasons. Moreover, these dependent claims recite additional features that render them patentable for additional reasons. For example, claim 9 recites interpreting the bytecode when it has been determined that the program instruction is not a branch instruction. It is noted that *Walters* states that if there is no corresponding native code block in the code cache, the cross-compiler begins compilation of a code block having an entry point instruction composed of the aforementioned next non-native instruction. If, during decoding of the entry point instruction by the cross-compiler it is determined that the entry point instruction is one of a predefined set of non-native instructions to be executed by an interpreter, then that instruction is executed by the interpreter. Otherwise, the cross-compiler continues with compilation of a block on non-native code (*Walters*, col. 3 lines 60 to Col. 4, line 3). Accordingly, it is respectfully submitted that *Walters* does not teach or suggest the additional features recited in claim 9.

It should also be noted that claim 25 recites that when it is determined that the program instruction is not a branch instruction, the method further comprises: interpreting the program instruction; and copying code corresponding to the program instruction into the code cache. It is respectfully submitted that *Walters* does not teach or suggest the combination of these features.

Although independent claim 11 and its dependent claims pertains to a computer program product, it recites similar features as those discussed above. Also, independent claim 22 pertaining to a computer system recites similar features as those discussed above.

Based on the foregoing, it is submitted that all pending claims are patentably distinct over the cited art of record. Additional limitations recited in the independent claims or the dependent claims are not further discussed because the limitations discussed above are sufficient to distinguish the claimed invention from the cited art. Accordingly, Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner.

Applicants hereby petition for an extension of time which may be required to maintain the pendency of this case, and any required fee for such extension or any further fee required in connection with the filing of this Amendment is to be charged to Deposit Account No. 500388 (Order No. SUN1P275). Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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